## Abstract

**Background & Objective**: Accurate working length determination of root canal is always considered by dentists. Radiographic techniques that commonly used in root canal therapy are periapical conventional techniques, but recently advanced techniques have been of great interest in recent decades. This study aimed to compare the accuracy between indirect digital imaging and conventional radiography in measuring the distance from file tip to radiographic apex by means of CBCT.

**Methods**: This experimental in vitro study conducted on 30 individuals molar teeth of the maxilla. After selection the teeth, cavity preparation, inserting K-file number 15 and mounting,CBCT and conventional and digital periapical (PSP) radiography has been taken of teeth. Then the values of the distance from file tip to radiographic apex which were obtained from tree methods, digital radiography, conventional radiography and CBCT were compared. Data analyses were performed using SPSS Ver.24.

**Results**: A significant difference was found between the distance from file tip to radiographic apex which is measured by conventional method and the CBCT($p<0.05$).but there was no significant difference between the distance from file tip to radiographic apex which is measured by digital method and the CBCT. Also there was no significant difference between the distance from file tip to radiographic apex which is measured by digital method versus the conventional radiography.

**Conclusion**: Digital radiography had greater accuracy in estimating the distance from file tip to radiographic apex versus conventional radiography.

**Key Words**: Digital radiography, Conventional radiography, CBCT, File tip, Radiographic apex